

## FIX-N-FAX #95

### CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION

No. 95

**Equipment Standard**

**Mandatory Compliance**

Date: December 1985

#### **Mobile Crane Certification Equipment Standard**

The Department of Industrial Relations, Division of Industrial Safety, now requires annual inspection, tests, and certification of all mobile cranes and derricks exceeding three tons rate capacity.

The Mobile Equipment Management Section will assist field personnel in contacting approved Agency personnel and arranging for crane and derrick certification for those mobile cranes which have a rated capacity exceeding three tons.

1. Construction and Safety Order 1588 and General Safety Order 4884, both of which became effective on January 8, 1973, provide that:
  - a) On or after January 15, 1974, all new cranes shall conform to regulations which include the testing and certification of cranes and derricks used in lifting service exceeding three tons rate capacity.
  - b) Cranes and derricks manufactured prior to above date shall be modified to conform to regulations which include the testing and certification of cranes and derricks used in lifting service exceeding three tons.
2. Such inspections and tests shall be certified as follows:
  - a) Qualified persons (Agencies) with current accreditation by the U. S. Department of Labor for the purpose of performing shore-based crane and derrick certification.
  - b) A professional engineer registered in the State of California as a civil, mechanical, or structural engineer who is knowledgeable in the structure and use of such equipment.
  - c) Responsible management or engineering personnel of the manufacturer of the equipment, and designated by the manufacturer to act as their agent and approved by the D.I.S.

- d) Other persons approved by D.I.S. who are knowledgeable in the structure and use of such equipment, who can demonstrate at least five years of recent qualifying experience and technical competency. These persons shall be working under the supervision of an agent or agencies qualified in A, B, or C as shown above.

3. The annual certification shall include the following:

- a) All functional operating mechanisms for improper function, maladjustment, and excessive component wear, with particular attention to sheaves, pins, and drums. This shall include an operational test with partial load in which all functions and movements including, where applicable, maximum rotation in both directions.
- b) All safety devices for proper function.
- c) Deterioration or leakage in lines, tanks, valves, drains, pumps, and other parts of air or hydraulic systems.
- d) Gear components (i.e. hooks, etc.) including wire rope and wire rope terminals and connections, with particular attention to sections of wire rope exposed to abnormal wear and sections not normally exposed for examination. Cracked or deformed hooks shall be discarded.
- e) Rope reweaving for compliance with certified agents' recommendations.
- f) Deformed, cracked, or excessively corroded members in crane structure and boom.
- g) Loose bolts, rivets, or other connections.
- h) Worn, cracked, or distorted parts affecting safe operation.
- i) Excessive wear and free operation of brake and clutch system parts, lining, paws, and ratchets.
- j) Load, boom angle, or other indicators shall be checked for significant inaccuracy.
- k) A durable rating chart visible to the operator, covering the complete range of the manufacturer's capacity ratings at all operation radii and for all permissible boom lengths and jib lengths, with alternate ratings for optional equipment affecting such ratings.
- l) Where used, clamshell buckets or other similar equipment such as magnets, etc., shall be carefully examined in all respects with particular attention to closing line wires and sheaves.

- m) Careful examination of the junction areas of removable boom sections, particularly for proper seating, cracks, deformities, or other defects in securing bolts and in the vicinity of such bolts.
  - n) It shall be ascertained that no counterweights in excess of the manufacturer's specifications are fitted.
  - o) Such other examination deemed necessary under the circumstances.
4. In addition to the annual certification, proof load tests shall be conducted on cranes before they are placed in service and at four-year intervals.
- a) Where machine stability governs the load testing, applicable provisions shall be followed.
  - b) Where structural competence governs load testing, the crane shall be tested at representative boom angles. An examination shall be made following the load test to determine that there was no permanent deflection or structural failure.
  - c) Proof loads shall not exceed the rated load by more than the percentages listed in General Safety Orders 5022 and 5023. Fixed anchors may also be used as test weights.
  - d) Precautions shall be taken to minimize the hazards of persons being struck by suspended loads or structures during the test.

Other specific information regulating the use of lifting equipment under three tons rated capacity can be found in Title 8, Article 9 of Construction and Safety Orders, Section 1581 through 1588.2.

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